Certification Technology of Composite Structures

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Stitched composites offer the potential to overcome the performance and cost barriers that limit the applications of composites in aircraft primary structures. While stitching has shown promise in improving the impact resistance of composite materials, its influence on subsequent fatigue behavior is not well understood. In order to facilitate the introduction of the stitched composites in aircraft applications and to develop the appropriate certification procedures, the influence of loading parameters on fatigue damage growth and life of these systems has to be established. In this presentation, the damage tolerance and durability of stitched, unstitched and selectively stitched composites under fatigue loading will be discussed. Both undamaged and impact damaged panels with blade stiffeners were investigated under compression loading.